REMARKS

Entry of the foregoing, reexamination and further and favorable reconsideration of the subject application in light of the following remarks, pursuant to and consistent with 37 C.F.R. § 1.112, are respectfully requested. By the present amendment, claim 1 has been amended to clarify that the immune reaction is a cellular immune reaction. Applicants of course reserve the right to pursue the canceled subject matter in a humoral continuation application. Support for the amendment to claim 1 may be found, at the very least, on page 4, last paragraph, of the specification as filed. No new matter has been added by the present amendment.

Prior to turning to the rejection set forth in the Official Action, a discussion of the claimed invention is in order. In this regard, the present invention relates to a skin test diagnosis kit (an assay) for measuring the cellular immune response to immunogenic E6 and/or E7 proteins or parts thereof applied to the skin of the test person. See, for example, the last paragraph on page 4 of the specification as filed and on page 8, lines 3-7, of the specification as filed ("The results prove the effectiveness of the skin test for a sensitive detection of a cellular immune reaction against HPV16-E7, which, in the cases examined, was associated with a spontaneous regression of an HPV associated cancer precursor lesion," emphasis added).

Claim 1 has been rejected under 35 U.S.C. § 102(b) for purportedly being anticipated by Viscidi et al, *Int. J. Cancer 55*:780-784 (1993). For at least all of the reasons set forth below, withdrawal of this rejection is believed to be in order.

Viscidi et al discloses a correlation of serum antibodies against E6 and E7 proteins and the invasiveness of cervical cancer. See page 780, right column at the bottom of the first paragraph, where Viscidi et al point out:

> We have developed TT-RIPA assays to measure antibodies to HPV-16 E6 and E7 proteins and now report that use of the RIPA format and detection of both the E6 and E7 protein provides a serologic assay which has specificity for invasive cervical cancer. (Emphasis added).

The assay described by Viscidi et al is thus used to measure the humoral immune response of an HPV infection.

Viscidi et al does not disclose or suggest an assay to measure the cellular immune response of an HPV infection. Consequently, the assays described by Viscidi et al and the present invention are distinct from one another, as they measure a different immune reaction (humoral response on the one hand and cellular response on the other hand). Humoral and cellular immune responses play different roles in the immune system. Whereas the antibody mediated humoral response is designed to attack extra-cellular subjects such as bacteria or free virus particles, the cellular immune response attacks cells with a modified protein expression pattern or different proteins, as they appear e.g. after a virus infection or in tumor cells.

Moreover, the test system described by Viscidi et al is not suitable to really decide if a lesion is invasive or not. The respective test system yields a response showing 30% wrong negatives. See page 783, left column, lines 8 to 10, of Viscidi et al:

> Antibodies to HPV-16 E6 and E7 proteins were not detected in 30% of the women who had HPV-16-associated invasive carcinoma. The reasons for this are not known...

The present invention, in contrast, provides a test system which is highly reliable. As discussed on page 7, second paragraph, of the subject application, the test system according to the present invention demonstrates that 15 out or 15 female progressors did not show a clear reaction in the test system, whereas 4 out of 4 regressors showed a slight to strong immune reaction.

In conclusion, Viscidi et al does not disclose or suggest an assay for detecting a cellular immune response to an HPV infection. Furthermore, the process disclosed by Viscidi et al, which detects a humoral immune response to an HPV infection, is not as reliable as the assays of the present invention. Thus, Viscidi et al does not disclose or even suggest the claimed invention.

In light of these remarks, applicants respectfully request withdrawal of this rejection under 35 U.S.C. § 102(b).

CONCLUSION

From the foregoing, further and favorable action in the form of a Notice of Allowance is believed to be next in order, and such action is earnestly solicited.

In the event that there are any questions relating to this application, the Examiner is invited to telephone the undersigned so that prosecution of the subject application may be expedited.

Respectfully submitted,

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Attachment to Amendment and Reply dated April 30, 2001

Marked-up Claim 1

1. (Amended) A skin test diagnosis kit for detecting an cellular immune reaction against the oncoprotein E6 and/or E7 of a human papilloma virus type, said diagnosis kit containing an effective amount of the oncoprotein E6 and/or E7 and/or at least an immunologically effective portion of E6 and/or E7 of a human papilloma virus type.

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